

California GARDEN



NOVEMBER—DECEMBER 1980
Seventy-five Cents

Volume 71 Number 6
ISSN 0008-1116

SCHEER

SAN DIEGO FLORAL ASSOCIATION

Events

NOV 4, 11, 18

FLOWER ARRANGING CLASSES with Adrienne Green
Casa del Prado, Balboa Park, San Diego, California
Tuesdays 10:00 a.m. to 3:00 p.m.
Call Mrs. Roland Hoyt for reservations (296-2757)

NOV 6, 13, 20

THURSDAY WORKSHOPPERS
San Diego Floral Asso. Garden Center, Casa del Prado, Balboa Park, San Diego
10:00 a.m. to 3:00 p.m. — For information call Mrs. Louis Kulot (222-5480)

DEC 4 (Preview)

DEC 5, 6, 7 (Public Show)

ANNUAL CHRISTMAS SHOW: "Christmas is Everywhere"
Majorca Room, Casa del Prado, Balboa Park, San Diego
Preview for members and guests — Thursday 7:30 p.m.
Show: Fri. & Sat. 11:00 a.m. to 4:30 p.m. Sun. 11:00 a.m. to 4:00 p.m.

Other Events

NOV 1, 2

SAN DIEGO TROPICAL FISH SHOW
Majorca Room, Casa del Prado, Balboa Park, San Diego
Sat. Noon to 8:00 p.m. Sun. 9:00 a.m. to 4:00 p.m. FREE

NOV 15, 16

CORONADO CROWN GARDEN CLUB 21ST ANNUAL FLOWER SHOW
"Echoes from the Pavilion"
Coronado Public Library: Wynn Room and Patio / 640 Orange Ave., Coronado, Calif.
Sat. 11:00 a.m. to 6:00 p.m. Sun. 10:00 a.m. to 4:00 p.m. FREE

NOV 22, 23

AFRICAN VIOLET & GESNERIAD OPEN HOUSE
Majorca Room, Casa del Prado, Balboa Park, San Diego
Sat. 1:00 to 5:00 p.m. Sun. 10:00 a.m. to 4:30 p.m. FREE

NOV 29, 30

FOURTH ANNUAL SUMI-E PAINTING & IKEBANA ARRANGEMENT SHOW
Majorca Room, Casa del Prado, Balboa Park, San Diego
Sat. & Sun. 11:00 a.m. to 4:00 p.m. FREE

NOV 30

DEC 1, 2, 3, 4, 5, 6, 7

SOUTH COAST BOTANIC GARDEN FOUNDATION "Holidays in the Garden"
26300 Crenshaw Blvd., Palos Verdes Peninsula, Calif.
Nov 30 2:00 to 4:00 p.m. Dec 1 thru 7 11:00 a.m. to 4:00 p.m.
Admission to Garden: \$1.00 Ages 5 to 17 & over 62 50¢

DEC 5, 6, 7

SAN DIEGO FLORAL ASSOCIATION ANNUAL CHRISTMAS SHOW "Christmas is Everywhere"
Majorca Room, Casa del Prado, Balboa Park, San Diego
Fri. & Sat. 11:00 a.m. to 4:30 p.m. Sun. 11:00 a.m. to 4:00 p.m. FREE

DEC 7

"CHRISTMAS IN FLOWERLAND" BAZAAR
Quail Botanical Gardens, Ecke Family Building, 230 Quail Gardens Dr., Encinitas, Calif.
Sun. 10:00 a.m. to 4:00 p.m. FREE

DEC 10

CHRISTMAS TEA by the La Jolla Garden Club / Benefit: Alice Clark Scholarship Fund
La Jolla Women's Club, Silverado & Draper, La Jolla, Calif.
Wed. 1:30 p.m. \$4.00 Reservations: Call Mabelle Gilbert (459-5420) or Esther Pricer (459-7351)

BALBOA PARK'S THIRD ANNUAL

"CHRISTMAS ON THE PRADO"

DECEMBER 5 & 6, 1980 — FRIDAY & SATURDAY
4:00 TO 9:00 P.M.

Sponsored by The House of Hospitality & Museums of San Diego

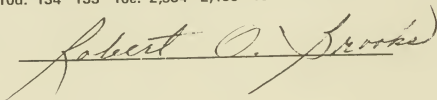
Friday Main Event (8:30 PM): Candlelight Procession with Choral Groups

Saturday Main Events: (4:00 PM) Santa Claus Parade

(8:30 PM) Sounds of Christmas (Organ Pavilion)

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

1. CALIFORNIA GARDEN Magazine 1a. 084020 2. September 26, 1980 3. Bi-monthly
3a. Six 3b. \$4.00 4. Casa del Prado, Balboa Park, San Diego, CA 92101/San Diego Floral
Office 5. (Same as item 4) 6. San Diego Floral Asso., Inc./Robert O. Brooks, 3158 Admiral
Ave., San Diego, CA 92123 7. San Diego Floral Asso. Inc. (Corp), Casa del Prado, Balboa Park
San Diego, CA 92101 8. None 9. Not changed 10a. 3,092 3,100 10b. 127 42 10b2.
2,323 2,281 10c. 2,450 2,323 10d. 134 133 10e. 2,584 2,456 10f. 508 644
10f2. N/A 10g. 3,092 3,100.





THE SAN DIEGO FLORAL ASSOCIATION

OFFICERS

President
Mrs. Louis J. Kulot
First Vice President
Capt. Spencer Church
Second Vice President
Mrs. George Bauhan
Treasurer
Mrs. Harry McAllister
Corresponding Secretary
Mrs. Spencer Church
Recording Secretary
Mrs. Mary A. Boykins
Past President
Mrs. W. E. Beistline

DIRECTORS

Term 1978-1981
Dr. Donald P. Watson
Mrs. Martin Firth
Mrs. Eugene Whigham
Term 1979-1982
Mr. L. D. Barrows
Dr. Donald Boyer
Mrs. Lois Donahue
Term 1980-1983
Mrs. Harley Cope
Mrs. John Pasek
Mrs. William Rathmann
Park Representative
Mr. George Kempland

HONORARY LIFE MEMBERS

Anne Robinson Tedford
Alice Mary Clark
Ethel Hoyt
Ada Perry
Samuel Hamill

PUBLICATION STAFF

Editor
Robert O. Brooks
Managing Editor
Althea Macdonald
Botanical Editor
Helen Chamlee
Consulting Editor
Dr. Donald P. Watson, Prof. Emeritus
Dept. of Horticulture, Univ. of Hawaii
Associate Editors
Skipper Cope
Bill Gunther
Department Editors
Horticulture George James
Historical Ethel Hoyt
Native Plants Helen Chamlee
Herbs Josephine Gray
Vegetables Rosalie Garcia
Circulation Penny Bunker
Advertising Penny Bunker

California GARDEN

Library of Congress No. ISSN 0008-1116

Published Since 1909
by
SAN DIEGO FLORAL ASSOCIATION
and
GARDEN CENTER
Casa del Prado, Balboa Park, San Diego, CA 92101
Mon. through Fri. 10:00 to 3:00
232-5762

NOVEMBER — DECEMBER 1980

VOLUME 71

NUMBER 6

Front Cover: English Holly. A watercolor by Ilse Scheer—distinguished artist of La Jolla, California. Many of her works are exhibited in galleries throughout the United States and abroad.

CONTENTS

- 165 ILEX
GEORGE JAMES
- 168 MERRY CHRISTMAS
ROSALIE GARCIA
- 170 CULTURE OF AFRICAN VIOLETS
COLLEEN WINCHELL
- 173 ORNITHOGALUM
HELEN CHAMLEE
- 175 THE ONE AND ONLY 'ROULETTA'
CAROL ROLLER
- 176 COLLECTING HEIRLOOMS VIA NURSERIES
DOROTHY S. BEHRENS
- 180 SOIL AMENDMENTS
ROY L. BRANSON
- 182 BOOK REVIEWS
RUSSELL MacFALL
- 183 THE CHRISTMAS TREE
ROSALIE GARCIA
- 184 KUDZU
SHARON SIEGAN
- 186 NOW IS THE TIME
PENNY BUNKER
- 188 BOOK REVIEW
HELEN CHAMLEE
- 189 YEAR 1980 INDEX
SHARON SIEGAN

© CALIFORNIA GARDEN (USPS 084-020) is a non-profit publication of the San Diego Floral Association, a non-profit horticultural organization. The magazine is published bi-monthly for \$4.00 per year; \$7.50 for two years, by San Diego Floral Association, Casa del Prado, Balboa Park, San Diego, California 92101. Manuscripts are invited. Manuscripts and illustrations submitted will be handled carefully, but we cannot assume responsibility for their safety. All opinion expressed are those of the author and do not necessarily reflect the views of the editors of the San Diego Floral Association. "Hortus Third" is the authority for all botanical names used in this magazine. Entered as second-class matter, December 8, 1910, at the Post Office of San Diego, California, under the Act of March 3, 1879.

POSTMASTER: SEND FORM 3579 ADDRESS CHANGES TO:
CALIFORNIA GARDEN, CASA DEL PRADO, BALBOA PARK, SAN DIEGO, CA 92101

The San Diego Floral Association & Garden Center

Casa del Prado, Balboa Park
San Diego, CA 92101
(714) 232-5762

Mon-Fri 10:00 to 3:00

Under the sponsorship of
The Park and Recreation Dept.
City of San Diego

Pres: Mrs. Louis J. Kulot (222-5480)
2732 Azalea Dr., San Diego 92106

FLOWER ARRANGERS' GUILD
Pres: Mrs. E. Rees Gould (475-8996)
2111 Rachel Ave., San Diego 92139
1st Thurs., Casa del Prado, 9:00 a.m.

Affiliate Members

ALFRED D. ROBINSON BRANCH,
AMERICAN BEGONIA SOCIETY
Pres: Mrs. Peter P. Lee (239-3196)
1852 - 31st St., San Diego 92102
2nd Tues, Home of Members, 10:30 a.m.

AMERICAN BAMBOO SOCIETY
Pres: Mr. Richard A. Haubrich (481-9869)
1101 San Leon Ct., Solana Beach 92075

BALBOA PARK AFRICAN VIOLET SOCIETY
Pres: Mrs. Colleen Winchell (479-6433)
2412 Morningside St., San Diego 92139
4th Mon, Casa del Prado, 7:30 p.m.

BERNARDO GARDENERS CLUB
Pres: Mrs. John C. Unger (485-5506)
17481 Montero Rd., San Diego 92128
3rd Thurs, desig Rancho Bernardo Clubs,
1:30 p.m.

CALIFORNIA NATIVE PLANT SOCIETY
Pres: Mr. Michael Evans (298-3385)
3640 - 8th Ave., San Diego 92103
4th Wed, Casa del Prado, 7:30 p.m.

CONVAIR GARDEN CLUB
Pres: Mrs. Virginia Soderberg (582-7098)
6197 Arno Dr., San Diego 92120
1st Wed, Casa del Prado, 7:30 p.m.

EXOTIC PLANT SOCIETY
Pres: Barbara Northington (462-4762)
6155 Sarita St., La Mesa 92041
3rd Wed, 1235 Avocado, El Cajon, 7:30p.m.

FALLBROOK GARDEN CLUB
Pres: Mrs. Dean Miller (728-9327)
4650-172 Dulin Rd., Fallbrook 92028
Last Thurs, (except Nov & Dec)
St Peter's Catholic Church, Sheridan Hall,
450 S. Stage Coach Lane, Fallbrook, 10:00am

FLEURS DE LEAGUE
Pres: Mrs. R. Clemson Griggs (454-6945)
6601 Avenida de las Pescas, LaJolla 92037
2nd Mon, Home of Members, 10:30 a.m.

IKEBANA INTERNATIONAL, CHAPTER 119
Pres: Mrs. Richard R. Davison (466-4575)
7046 Murray Park Dr., San Diego 92119
4th Wed, Casa del Prado, 10:00 a.m.

LA JOLLA GARDEN CLUB
Pres: Mrs. Michael C. Addison (459-6198)
6112 Waverly Ave., La Jolla 92037
3rd Wed, La Jolla Woman's Club

LAS JARDINERAS
Pres: Mrs. Wm. W. Crawford, Jr. (223-0642)
727 Stafford Pl., San Diego 92107
3rd Mon, Home of Members, 10:00 a.m.

ORGANIC GARDENING CLUB

Pres: Mr. Andrew Thomas (454-2831)
5735 Chelsea Ave., La Jolla 92037
3rd Fri, Casa del Prado, 7:30 p.m.

PALOMAR CACTUS & SUCCULENT SOC.

Pres: Mr. Craddock Monroe (744-9276)
2110 Low Chaparral Dr, San Marcos 92069

PALOMAR DISTRICT, CALIFORNIA

GARDEN CLUBS, INC.

Dir: Mrs. P. P. Puddy (487-2038)
16303 Avenida Florencia, Poway 92064

POINT LOMA GARDEN CLUB

Pres: Mrs. Martin Firth (224-0471)
1217 Alexandria Dr., San Diego 92107
2nd Wed, San Diego Federal Savings,
Rosecrans & Cannon, 10:00 a.m.

SAN CARLOS GARDEN CLUB

Pres: Mrs. Max Thompson (464-2548)
6886 Casselberry Dr., San Diego 92119
4th Tues, Home of Members, 9:30 a.m.

SAN DIEGO AROID SOCIETY

Pres: Bill Virden (272-3274)
4657 Shoshoni St., San Diego 92117
Meets—Home of Members

SAN DIEGO BONSAI CLUB, INC.

Pres: Mr. C. A. Puliafico (748-2561)
13065 Tuscarora Dr., Poway 92064
2nd Sun, Casa del Prado, 1:00 p.m.

SAN DIEGO BOTANICAL GARDEN

FOUNDATION, INC.
Pres: Mr. David Grimes (755-0798)
13651 Nogales Dr., Del Mar 92014

SAN DIEGO BROMELIAD SOCIETY

Pres: Dr. Norman Lurie (278-6158)
10436 El Comal Dr., San Diego 92124
1st Thurs, Byzantine Catholic Church,
2235 Galahad Rd, Sierra Mesa, 8:00 p.m.

SAN DIEGO CACTUS & SUCCULENT SOC.

Pres: Mr. Thomas Hamecher (404-6245)
996 Terrace Crest, El Cajon 92020
2nd Sat, Casa del Prado, 1:30 p.m.

SAN DIEGO CAMELLIA SOCIETY

Pres: Mr. Eugene Snooks (454-6659)
6114 La Jolla Blvd, La Jolla 92037
3rd Wed, Casa del Prado, 7:30 p.m.

SAN DIEGO COUNTY DAHLIA SOCIETY

Pres: Mr. Gerald Lohmann (279-5235)
6616 Rockglen Ave., San Diego 92111
4th Tues, Casa del Prado, 7:30 p.m.

SAN DIEGO COUNTY ORCHID SOCIETY

Pres: Mrs. R. E. Hammond (426-6831)
1341 Park Dr., Chula Vista 92011
1st Tues, Casa del Prado, 7:30 p.m.

SAN DIEGO DAYTIME AFRICAN VIOLET SOCIETY

Pres: Mrs. Dorothy Grimsby (282-4572)
4557 Bancroft St. No. 3, San Diego 92116
2nd Mon, Fellowship Hall, Christ United,
12 Noon, Methodist Church, 3295 Meade

SAN DIEGO EPIPHYLLUM SOCIETY

Pres: Mr. Gene Lund (469-1677)
5666 Aztec Dr., La Mesa 92041

SAN DIEGO FUCHSIA & SHADE PLANT CB.

Pres: Mr. Howard T. Ferguson (278-1797)
2412 Fleetwood St., San Diego 92111
2nd Mon, Casa del Prado, 7:30 p.m.

SAN DIEGO GERANIUM SOCIETY

Pres: Mrs. James Koho (286-0818)
4810 Loukelton Way, San Diego 92120
2nd Tues, Casa del Prado, 7:30 p.m.

SAN DIEGO GESNERIAD SOCIETY

Pres: Mr. Mike Ludwig (295-1071)
644 Torrance, San Diego 92103
1st Thurs, Casa del Prado, 7:30 p.m.

SAN DIEGO-IMPERIAL COUNTIES IRIS SOCIETY

Pres: Mrs. Eugene Cooper (295-7938)
4444 Arista Dr., San Diego 92103
3rd Sun, Casa del Prado, 1:30 p.m.

SAN DIEGO ROSE SOCIETY

Pres: Mrs. Esther Barksdale (222-4093)
3756 Milan St., San Diego 92107
3rd Mon, Casa del Prado, 7:30 p.m.

SAN DIEGUITO GESNERIAD SOCIETY

Pres: Mrs. Roman Shore (433-3532)
4471 Estada Dr., Oceanside 92054

SOUTHWEST GROUP, JUDGES COUNCIL

Pres: Mrs. Frank Thomas (583-7045)
6819 Claremore Ave., San Diego 92120
1st Wed, Casa del Prado, 10:30 a.m.

SOUTHWEST HEMEROCALLIS SOCIETY

Pres: Mrs. Wm. VanDusen (445-3024)
P. O. Box 611, Alpine 92001
4 mths pr yr, Glendale Fed Savings & Loan

898 E. Vista Way, Vista

UNIVERSITY CITY GARDEN CLUB

Pres: Mrs. Ronald Scarafone (453-5144)
3214 Wellesly Ave., San Diego 92122

VILLAGE GARDEN CLUB OF LA JOLLA

Pres: Mrs. Lovell Marcus (459-2151)
5633 Soledad Mountain Rd., LaJolla 92037
4th Thurs, LaJolla United Methodist
6063 La Jolla Blvd., La Jolla, 1:00 p.m.



Ilex

by George James



LEFT: *Ilex cornuta* 'Dazzler'

BELOW: *Ilex aquifolium* 'Golden Queen'

These two varieties must be planted in groups of five or more plants to make sure of having plants of both sexes present. Plants alone, or where only one sex is present will not bear berries.

ILEX IS THE botanical name of the group of shrubs commonly called holly. English holly, the one used for Christmas decorating and so often reproduced on Christmas cards, is a member of the holly family and the one best known to gardeners, but there are many other varieties. These have value as landscape plants because they are evergreen and attractive all the year around and, as a bonus, many of them bear crops of red berries during the holiday season. Some kinds of holly are well adapted to southern California conditions and they can be used as shrubs, as a hedge or screen, as an espalier or, in some cases, trimmed into a single-stemmed tree.

Hollies bear male and female flowers on separate plants, the male producing pollen only and the female, when its flowers are pollinated, bearing crops of berries. It is sometimes possible to buy plants of known sex and in such cases one male plant will supply pollen for several female plants in the same area. If there is a source from which a small piece of a male plant can be obtained, this can be grafted into a female plant and the pollination needs will be met. There are some varieties whose female plants have the ability to produce berries without having a male plant nearby. These are said to be self-fruitful. In the descriptions to follow, this self-fruitful habit will be indicated. Where self-fruitful



plants flower but do not have berries, the use of a fruit-setting spray, applied during flowering, may cause berries to set.

There are differences in the foliage of the different varieties, though all are considered evergreen. Some kinds have leaves about an inch in length, while others have leaves up to five inches long. On some the leaf margins have very definite spines, while on others

the leaves have smooth margins, or only a few spines. All, when properly grown, have attractively colored foliage and even if they did not have those shiny berries would be worthy of consideration as landscape shrubs, because of their consistent good looks.

Holly plants bear on the past season's growth, that is, a shoot grows one year and bears fruit the next. While the berries are forming the shoot continues to grow so that when the berries are ripe there is a shoot several inches long extending beyond the cluster of berries. When berried branches are cut for decoration, or when the plant is pruned and this new growth is cut off, no more berries will be borne at this point until a shoot that grows from one of the buds below the cut has grown for one year. This should be kept in mind when pruning so that all the berry-bearing wood will not be cut off, or if it is, one would be prepared to accept the consequences. Holly plants are best trimmed with hand shears so that individual pieces can be cut off without damage to surrounding leaves. If hedge shears or electric hedge trimmers are used, nearby leaves are cut and the cut edges soon turn brown and look unsightly. Selective pruning, as has been described, is recommended for all plants with large leaves which could be damaged by the usual hedge-trimming tools.

As a rule holly plants do best in a soil that is slightly acid, is fertile and well drained, and is of light nature. Also, they like frequent irrigations. Most hollies like partial shade but they can be grown in fairly deep shade, where the plant will become taller and less dense. There are varieties also that are well adapted to warm and bright locations.

The most common pests of holly, in this area, are scale and mealybug. These can be discouraged by frequent syringing with a strong stream of water. If, in spite of this treatment the infestation becomes troublesome, it can be controlled by applying an oil spray during the cool months or a systemic material at any time.

Ilex aquifolium English Holly

This plant is native to England and southern Europe, where the climate is cooler and moister than ours. Close to the ocean it can be grown in fairly bright locations but farther inland, away from the modifying influence of the ocean, it should be planted in a partially shaded location. A male and a female plant are needed for berries in most cases but several varieties of self-fruitful female plants are offered.



Ilex altacalensis 'Wilsonii' (Wilson's Holly)

The writer has had one of these for about three years and so far no berries—it sets a lot but drops them in a short while. It is hoped that when the plant's growth slows down (it is quite vigorous now), it will retain its berries. It has about two more years to prove itself or out it goes. The fruit setting hormone mentioned earlier is of no help in this situation because the berries are set, which is what the hormone would do.

Ilex aquifolium 'Fertilis' and 'San Gabriel'

These two varieties are self-fruitful females which are quite similar in all respects, and both have the spiny leaves that fit our imagined picture of the typical holly sprig.

Ilex aquifolium 'Argenteo Marginata'

(Variegated English Holly) This is one of several varieties, all with different cultivar names, that have variegated leaves. This has the typical spiny leaf and has a silver variegation at the edge of the leaf.



LEFT:
Ilex cornuta 'Burfordii' (Burford's Holly)

There are others that have a silver center to their leaves and still others that have gold variegations at the edge or in the center of the leaves. These are grown mostly for their foliage value but under proper conditions can bear berries.

Ilex aquifolium 'Sparkler'

This selected strain of English holly is a strong grower and bears exceptionally large berries. A plant of each sex is needed for berries.

Ilex altaclarensis 'Wilsonii' (Wilson's Holly)

This is a hybrid between the English holly and a variety from the Canary Islands. It is one of the varieties that are well suited in southern California conditions, growing in sun or shade and not as particular as to the soil in which it grows as are some of the others. The foliage is large, up to five inches in length and three inches across, with very few spines on the edges of the leaves. When grown as a bush, with several main stems, it will grow to be about 10 feet tall and when trimmed to a tree with one stem will grow to 15 or 20 feet. Wilson's holly produces large crops of red berries even when planted alone.

Ilex cornuta Chinese Holly

This and related varieties are well suited to southern California use because they do best where it is warm and bright, and can be grown in the desert if given some shade. The leaves are stout and their four strong spines make the holly useful in discouraging intruders. The plant is strong growing and where both sexes are present it has large, bright red berries.

Ilex cornuta 'Burfordii' (Burford's Holly)

Well suited in our climate and one of the most widely planted varieties because it bears heavy crops

of berries even when planted alone. The leaves are smooth on the edges, no spines, thus disappointing to many persons because they do not closely resemble the English holly. The leaves are decidedly glossy and have a little richer color if planted in a partially shaded place. *I. c.* 'Burfordii Nana' is a dwarf variety.

Ilex cornuta 'Dazzler'

A compact, strong growing plant that has leaves like the Chinese holly and bears crops of large red berries without a pollinator being present. A good choice for southern California.

Ilex cornuta 'Rotunda' (Dwarf Chinese Holly)

A dwarf variety that has Chinese holly foliage but no berries. This is a very hardy, useful plant that will grow to be about 15 inches high in five years.

Ilex pernyi

A large shrub or a small tree, according to the training. As a tree it will reach a height of 30 feet. Its leaves are about an inch long, with only a few spines along the margins. It will bear good crops of berries when planted alone. This one is well suited to southern California conditions and soils. □

Ref: *Sunset Western Garden Book*
Hortus Second

Wm **C. Studebaker**
CONSULTING ARBORIST
TREES
Complete Service
State Lic. 273813 PL PD INS

• RESIDENTIAL
• COMMERCIAL
• CONSTRUCTION
— 15 Yrs —
S D City Tree Supv
— 35 Yrs —
Practicing Tree Surgeon
277-9045

Merry Christmas

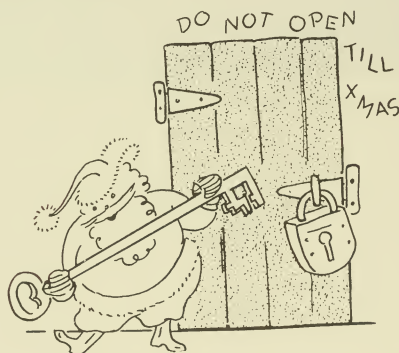
by Rosalie Garcia

WHEN I SEE all the little forests of Christmas trees appear overnight, when the stores become crowded and parking space disappears, I think of my childhood in southwestern Arkansas. There we made an occasion of going to Cedar Hill at the back of our pasture to cut our family Christmas tree. Usually we invited the children of two families who lived in town to join us and get their trees too. We took along younger brothers and sisters, who would scamper off, get lost, and otherwise interfere with the business at hand, that of selecting and chopping down our cedar trees on a hill overlooking the black bottom land that was just right for growing cotton and corn. Because the soil at this spot on the hill was poor, a kind of limestone outcropping, the cedars never grew over 6 to 8 feet, but that did not bother us. They were fragrant and just the right size. I am not sure which cedar it was, but I never saw any other similar trees growing near our farm. My great-grandfather had a habit of planting any seeds he could get which leads me to speculate they were either Atlas cedar or one of the incense cedars that do not ordinarily grow in that area.

After we had made our selections we piled the trees on an improvised sled and dragged it to the house where Miss Ann, my grandmother, was waiting with a pot of hot chocolate and thick molasses cookies. If she thought she could stand it, she would let us make fudge and maybe molasses taffy—we were prone to get the kitchen good and sticky when we pulled taffy.

This occasion was often timed to be on my birthday, which was a week before Christmas. This

was not the time for a birthday party, so gifts for me were always deferred until Christmas. We popped corn and strung garlands and long strings of red haws or cranberries if we had them. We had put the tree in a coffee can of water where it stayed, ready to be set up the next day with a sheet draped around the bottom of the tree.



We did not put the presents on the tree until Christmas Eve, and then in a locked room because the smaller of my two young sisters had an insatiable curiosity and impatience that drove her to finding and opening the presents, no matter how cleverly hid and supposedly inaccessible they were. From the time she could walk, she could climb into lofts, descend to nooks in the cellar and even investigate the salt bins in the smoke house. As a bossy big sister, I threatened that Santa would not bring her any presents, but she knew about Santa. She also knew that mother would not punish her.



We opened our presents on Christmas Eve before a crackling fire in the front room—a combination parlor-guest room. Mother played the organ and we sang Christmas songs, then she handed out our gifts. We still wanted to hang our stockings for Christmas morning and she always held out some goodies to fill them. Often an old bachelor cousin would drop by with the most lavish gifts we ever received, big curly-haired blonde dolls (which

I did not appreciate) and an abundance of "store bought" fruits and candy. He also brought a bottle of spirits to make a hot toddy which he insisted on sharing. We thought it "burny" and horrid.

The real wax candles on the tree were lit every night during Christmas week. We enjoyed the flickering light on the cedar aroma from their heat. On New Year's Eve we took the tree down rather sadly, cut the branches off and burned them, enjoying the little rainbow flames and the last fragrance of the burning cedar.

We knew then it was the end of the holiday season and the beginning of the new year. □

SAN DIEGO'S LARGEST NURSERY FACILITY

... with complete, personalized attention
to your every garden need ...

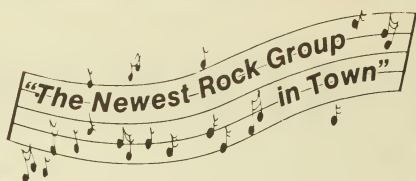
*Presidio Nursery
and Florist*

LINDA VISTA RD. at MORENA BLVD
PHONE 297-4216

Antonelli Brothers

TUBEROUS BEGONIAS
2545 Capitola Road
Santa Cruz, California 95062

36-page Color Catalog 25 cents



helps you make beautiful music
for all your masonry needs.

Whether it is a speedy
"Rock 'n Rollin'" delivery,
loading your car in our sales yard,
technical sales assistance,
a happy voice when you call our sales office,
or manufacturing precision bloc and bric.



*Our people are employed by Hazard,
BUT they work for YOU!*

SAN DIEGO

1-163 at Friars Road, Mission Valley • 297-4141

EL CAJON

1155 Vernon Way, El Cajon • 448-7411

SOUTH BAY

Fifth and "C" Street, Chula Vista • 427-2062

CULTURE OF AFRICAN VIOLETS

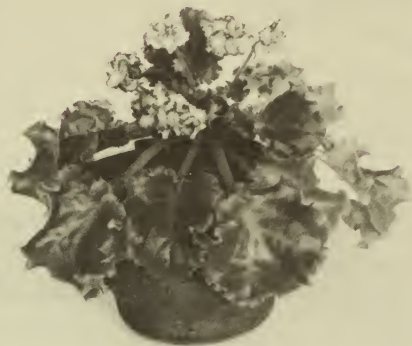
by Colleen Winchell

AFRICAN VIOLETS ARE so called because they originated in East Africa in the province of Tanganyika. The plants were discovered in 1892 by a German planter, Baron Walter von Saint Paul. He sent seeds of two plants to his father in Germany. The father grew the seeds and a year later took the plants to a noted botanist, Herman Wendland. He named the plants *Saintpaulia* (genus) after the discoverer, and gave them the species name *ionantha*—"with violet-like flowers." The African violet belongs to the gesneria family and is no relation to the common violet.

In 1936 ten hybrids (offspring of the 1892 plants) were offered to the buying public and a love affair was born! Blossoms on these ten plants were in varying shades of blue and purple. Today we have approximately 25,000 named varieties hybridized from the ten 1936 introductions! Colors range from white to all shades of blue, purple, magenta (called red) and pink. There are combinations of pink and white, blue and white, and pink and blue. As yet, we have no true red and nothing like a yellow. Blooms may be single or double, fringed, ruffled and/or star-shaped. Foliage may be smooth, quilted, ruffled, tailored, notched or spooned with shades from lime to forest green. Some varieties have red on the bottom side of the foliage. Variegated foliage varieties have combinations of white and green, sometimes with pink and/or tan.

African violets come in several sizes and types. In the upright, single crown specimen, we have miniatures (up to 6 inches diameter), semi-minis (up to 8 inches diameter), standards (up to 12 and 14 inches diameter) and large (up to 20 inches diameter). We also have trailers (multi-crowned viny specimens) in the same size categories. Several of the original species plants are available.

African violets like warm humid conditions and may be grown in natural light or under fluorescent tubes.



Beautiful hybrid—ruffled, pale green leaves;
double white blooms fringed in purple-blue

Photo by Helen BARBER

Listed below are cultural practices which are common knowledge among experienced African violet growers and are based on wide experience and scientific facts. Following them will assure you success in raising beautiful African violets.

- **WATER ONLY WHEN SOIL IS DRY TO THE TOUCH**

Plants need to be evenly moist. You may water from the top or the bottom; water thoroughly but do not let plant sit in the water for more than ½ to 1 hour. Roots do need to breathe; overwatering "drowns" the roots causing root rot. Water should be room temperature or a little warmer (tepid).

- **USE LIGHT, POROUS, STERILE SOIL MIXES WITH GOOD DRAINAGE**

This type soil provides air spaces for the roots to breathe and allows roots to grow easily. Garden

CALIFORNIA GARDEN

soil usually has pests and bacteria that are harmful to African violets.

- **USE THE RIGHT SIZE POT**

African violets like to be rootbound and the rule of thumb is that the pot size should be 1/3 the diameter of the plant. A short squatty pot is preferred over the taller variety.



African violets like to be rootbound and the rule of thumb is that the pot size should be 1/3 the diameter of the plant

- **PROVIDE 12 TO 14 HOURS OF LIGHT DAILY**

The amount of light an African violet receives determines its growth and number of blooms. Plants may be grown under fluorescent tubes or in natural light. Direct sunlight will burn the foliage (especially in southern California).

- **KEEP THE TEMPERATURE BETWEEN 60 TO 75° F.**

Even temperature close to 70° F. will give a steady growth. Temperatures above and/or below the recommended range can stunt growth and cause lack of bloom.

- **STRIVE FOR 40% OR HIGHER HUMIDITY**

Often this is hard to achieve. It is very helpful to place plants with saucers on trays of pebbles, astro-turf, etc. and keep the trays constantly moist. Misting plants with warm water is helpful during hot,

dry spells when humidity is low.

- **USE HIGH ANALYSIS FERTILIZERS**

(20-20-20, 15-30-15, 12-36-14, etc.) Use ¼ teaspoon per gallon of water each and every watering. 5-50-17 fertilizer is for variegated foliage plants, but is used occasionally as a bloom booster for all plants. To eliminate fertilizer salts buildup, you should "leach" once a month (pour 1 quart clear water through plant, drain thoroughly, let dry and then resume fertilizer watering).

- **PROVIDE PLENTY OF FRESH AIR WITHOUT DRAFTS**

Good air circulation is necessary, but hot or cold air blowing directly on the plants will cause shock. Stagnant air often causes mildew and other molds.

- **KEEP PLANTS CLEAN AND WELL GROOMED**

Clean foliage helps a plant to breathe and stay healthy. A soft brush is recommended to keep dust and soil particles off leaves and petioles (stems). Spent blossoms and broken or unhealthy leaves should be removed to keep down further injury and diseases.

- **LEARN AND PRACTICE PREVENTIVE MEASURES AGAINST DISEASES AND INSECTS**

Good sanitation practices can eliminate many diseases and pests. When a problem occurs, carefully utilize sprays, systemics, etc., especially formulated for African violets, according to recommended directions. Do read caution labels! □

Colleen Winchell is president of the Balboa Park African Violet Society, San Diego, Calif.

Photos by HELEN BARBER

SPECIMEN PLANTS
FOR YOUR HOME AND FOR YOUR GARDEN
ALL SIZES
AND VARIETIES

Bennett's
GARDEN CENTER

7555 EADS AVE.
LA JOLLA, CA 92037 454-4241



(714) 448-0659

Open weekends 1 to 5 p.m.
Weekdays by Appointment

Hardy & Fouquette Orchids

WHERE YOU FIND THE UNUSUAL
Along With The Usual

Carlton Hills

9443 E. Heaney Circle
Santee, CA 92071

San Diego Floral Association invites you to join us

MEETINGS • WORKSHOPS
LIBRARY • INFORMATION SERVICE

Membership Rates:
(Magazine included)

INDIVIDUAL.....	\$ 7.50	<input type="checkbox"/>
FAMILY.....	8.50	<input type="checkbox"/>
SUSTAINING.....	10.00	<input type="checkbox"/>
CONTRIBUTING.....	25.00	<input type="checkbox"/>

(Please PRINT)
Name: _____

Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

California GARDEN

Since 1909

- * California's oldest garden magazine
- * Flower, fruit and vegetable talk for the neighborhood gardener
- * Authoritative information for the serious student of horticulture

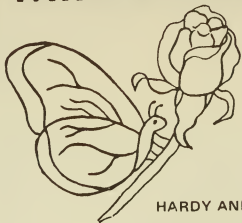


The perfect gift to a friend, relative or neighbor

1 YEAR SUBSCRIPTION \$4.00
2 YEAR SUBSCRIPTION \$7.50

San Diego Floral Association
Casa del Prado, Balboa Park
San Diego, CA 92101

McDANIEL'S MINIATURE ROSES



BUSH • TREE •
CLIMBER •
HANGING
BASKET

HARDY AND EVERBLOOMING
SHIPPED ALL YEAR

7523 ZEMCO ST.
LEMON GROVE, CA 92045
Please Phone (714) 469-4669



G.S. JOHNSON ROSE NURSERY



Rose Specialists



Bushes - Climbers - and Tree Roses

Bare Roots in Season

in cans, available all year

Spray Materials and Fertilizers

24 YEARS IN SAME LOCATION

8606 Graves Ave., Santee, CA 92071
corner Graves & Prospect

Open 8 A.M. to 5:30 P.M.

Off Highway 67
Phone: 448-6972

Closed Wednesdays



Few flowers can match *Ornithogalum arabicum* for dazzling contrast of black and white

Ornithogalum

STAR? NAP? WONDER? ONION?

by Helen Chamlee

NAME CALLING IS an ancient practice. Since the very beginnings of language people have been inventing names for things, all kinds of things, including plants. Some plants anyway.

On the one hand, a number of plants have been of so little interest to anyone but scientists that no one but scientists has called them anything. After all, if a plant isn't memorable or interesting in some way you aren't going to talk about it, so don't need a name for it. On the other hand, a host of plants have served mankind as food, medicine, stock feed,

shelter, poison, liquid refreshment, fiber, fuel, decoration—the list goes on and on—and these plants have been talked about. So they have acquired folk names, in all the languages there are.

The genus *Ornithogalum*, in the lily family, is one that has gathered unto itself a set of English common names ranging from the sublime to the ridiculous: Star-of-Bethlehem, Nap-at-Noon, Dove's Dung, Wonder Flower, Prussian Asparagus, Summer Snowflake, Pregnant Onion.

Some of these names tell more about the



LEFT: The large rounded flower clusters are especially effective against green shrubbery. *Ornithogalum arabicum*

plant than does its official botanical name. *Ornithogalum* is derived from the "Greek for bird and milk; application not obvious," says Bailey (Standard Cyclopedia of Horticulture). Bird milk? Milk bird? No, not obvious.

This is a genus of about 100 species of perennial bulbs native to Africa, Europe and western Asia, mostly with white or green and white flowers—the milk perhaps?

Several species are in cultivation in both America and Europe, some as outdoor plants, others as house or greenhouse plants.

One of these is *Ornithogalum caudatum*, which rejoices in the names of Sea Onion, False Sea Onion, German Onion and Pregnant Onion, in English, and most likely an equal number in other European and South African languages.

Its "pregnancy" and its odd growth habit make it more of a curiosity than a thing of beauty. Mostly it is a large (3 or 4 inches thick) grayish bulb sitting on top of the soil in a pot, its long floppy leaves hanging down 3, 4 or 5 feet if one can find a high enough perch for it. I am guessing that these long flexible leaves account for the *caudatum* (tail) part of the plant's name. This strange "onion" does bloom, sending up a tall wand-like green stem topped with a mass of small white flowers having a wide green midvein and green pistil or "eye."

The pregnancy refers to its curious reproductive scheme; bulblets form under the smooth skin

and grow to marble size before they fall out and root.

Easily grown but not as often seen as it deserves is the one with the shining black eyes, *O. arabicum*, the Star-of-Bethlehem. This one too has floppy leaves, up to 2 feet long. The flower spikes are stout and stiff, usually standing above the bent-over leaves. Flowers are waxy white, one to two inches wide and centered with a bead-like pistil.

A yellow or golden-flowered species, *O. thyrsoides*, bears compact clusters of flowers with brown centers.

A lower growing species with white flowers and grass-like foliage, *O. umbellatum*, is also called Star-of-Bethlehem. People have liked that name for these starry flowers and passed it along.

Oh, I almost forgot—how is *Ornithogalum* pronounced? Just come down hard on "thog." □

SPLENDID TREES FOR LANDSCAPING (container grown)

Cherries and Apples adapted to warm climates

Eighty pine varieties, plus cedars, sequoias, natives.
Wide variety of citrus, cherimoyas, avocados, and kiwi fruit vines.

4301 Lynwood Drive
Chula Vista, CA 92010

Open 9 to 5 422-2400

Closed Monday & Tuesday

(just east of Hwy. 805 & Bonita Road)



THE ONE AND ONLY 'ROULETTA'

by Carol Roller

Everyone who sees 'Roulette' wants this ivy geranium of dark red-edged petals with white centers



Photo by J. E. KOHO

EVERYONE WHO SEES 'Roulette' remembers it. Last year a total stranger called me to ask where she could get an ivy geranium like the one she had seen hanging in front of a shop in Solvang, California. When she said the flowers were red and white, I knew she had seen a 'Roulette'. I would have known it was 'Roulette', even if I hadn't been to Solvang a few weeks earlier and seen the plant blooming there.

Although ivy geraniums are fairly common, 'Roulette' is the only variety which has dark red-edged petals with white centers. It is considered a semi-double, having more than five full-sized petals and a few half petals in the center. A fairly large plant in comparison to other ivy geranium varieties, it tends to grow long, droopy branches. It needs an annual pruning or, still better, a year-round regimen which will catch each stem when it needs attention. The prunings can be turned into cuttings which root easily.

Like other ivy geraniums, 'Roulette' should be groomed to remove dried leaves and faded flowers. The plants should be fed a balanced fertilizer and be watered thoroughly when fairly dry. Good drainage and abundant light are required. Insects and plant diseases will seldom be a problem on a well-tended 'Roulette'.

'Roulette' was found in Mexico a few years ago. Other ivy geraniums have been in cultivation

for a long time. The primary ancestor was *Pelargonium peltatum*, a sprawling South African wildflower which was taken to Holland about 1700. This species looks a great deal like an old, five-petaled, pale lavender variety which is still popular today. The leaves are glossy and succulent, with angular lobes similar to English ivy (*Hedera*). The leaves are shield-like with the petiole attached to the leaf near the center, rather than at the leaf blade.

If 'Roulette' has a fault, it is the tendency to revert to other flower colors. One very common change is to produce flowers which are basically red with teardrop-shaped white marks. Often the entire flower will revert to the dark red form known as 'Mexican Beauty'.

Growers have also reported the appearance of a white version named 'Mrs. Banks', a pink variety called 'Comtesse de Grey', and two pink and white combinations which are marketed as 'Warren Bishop' and 'Watercolor'. Any stem bearing flowers other than the true 'Roulette' should be removed from the plant in order to preserve 'Roulette'.

'Roulette' is a commercially grown variety. Not all nurseries stock it, but it is occasionally seen in local plant departments. Nurseries specializing in geraniums try to keep a supply available. The trouble is, of course, that everyone who sees 'Roulette' wants one!



Collecting Heirlooms Via Nurseries

by Dorothy S. Behrends

THE MEMBERS OF the long-lived cycad family are living heirlooms for modern families to hand down from generation to generation, and they are valuable.

It is always exciting for each collector of any given plant, to find newly introduced types. Even though the cycad family is almost as big as the Smiths, new types are emerging or re-emerging occasionally, because the types must be collected from foreign lands where they are indigenous. There are few countries left which allow a vast number of one type of indigenous plants to be removed. Collected plants to be imported are first stripped of fronds and roots; then planted to become established; next, pollinated by hand; then propagated by the produced seeds. It is then they are ready to distribute in quantities as seedlings. All this takes time.

Approximately five years ago Rob McGann introduced a very beautiful *ceratozamia* collected from the border of Guatemala and Mexico. It is an upright, medium-green to yellow-green, depending on the intensity of light, and produces an abundance of plume-like fronds each season, making it a full, lush cycad. It has not been identified to date, but is obtainable to grow and enjoy as "unidentified" while waiting for an accepted name.

A renewed introduction is *Cycas neo caldonica* first introduced by W. T. Swingle (brother of the late Dr. Charles Swingle, former horticulture instructor at Palomar Community College in San Marcos, California) in the 1920's. This cycas was reintroduced approximately four years ago by Jack Ingwerson from seeds he collected in New Caledonia. It has beautiful medium-green linear leaflets.

Another type, *Dioon mejiae* (pronounced may-HEE-eye) from Honduras, introduced approximately six years ago by Horace Anderson, is similar to *D. spinulosum*, but fronds have a blue-green cast, with scurfy hairs on the underside of the frond's midrib. Most of us appreciate the fern-like beauty of *D. spinulosum* so this new type is an addition greeted with enthusiasm.

Cycads are acknowledged to be among the oldest living seed-bearing plants on earth. They are



The Sago Palm, *Cycas revoluta*, is crowned with stiff pinnate leaves that nestle a tomentose mass of chamois bracts with unusual red fruits in season



not palms, but are more closely allied to pines in reproductive methods. The one stand discovered in the United States, probably grew during the Mesozoic age in what is now the Cycad National Monument, between the forks of the Cheyenne River in the southern Black Hills of South Dakota. The changes in climate through succeeding ages were too much for these cycads with their complicated reproductive system. All that is left of this stand is in petrified form.

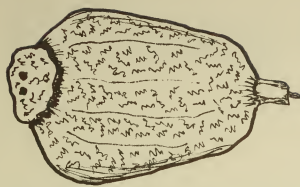
Only persons of unlimited patience should attempt growing the Cycadaceae from seed. A few of the obstacles are herewith listed:

- It takes perseverance and patience to make contact with seed sources.
- Seeds must be fresh to germinate.
- Constant controlled heat and humidity must be maintained during the germination period.
- Pricking out and potting the seedlings as they emerge must be done regularly as seeds do not all germinate at the same time.
- Ideal conditions must be maintained for at least one year until the seedlings become established and harden off.

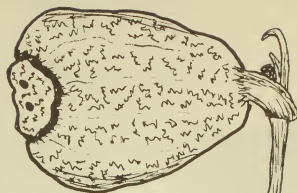
This list has been instrumental in sending many persons to a nursery to find established plants, instead of attempting the long and arduous task of growing cycads from seed. Mr. and Mrs. Horace Anderson were pioneers in San Diego County in growing cycads from seed in commercial quantities. The Andersons began by importing the seeds from foreign sources, but soon developed a successful method of pollination in cultivation.

Male and female flowers are borne on separate plants. The winds handle the transfer of pollen in the wild, but in cultivation, man may help in this task. Careful examination of the cones will help a hybridizer determine the sex of the plant.

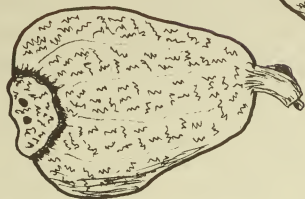
The male cycad produces a bloom shaped like an erect, elongated cone containing segments or scales which produce pollen on the underside of each scale. When mature the pollen is easily released by



A



C



B

- A — Germination showing slightly on
Cycas meijae
B — Continuance of growth emerging
C — Extended growth showing root
going into the soil mix with leaf growth
rising upward

tapping. This is scattered over the female bloom.

The female plant produces a smaller, dome-shaped bloom that consists of spreading tufts with notched scales which contain the ovules. Both blossoms must be mature to successfully effect pollination. After a time seeds will form if the pollination is successful, otherwise, the cone disintegrates and all efforts will have to be repeated at a later date.

To germinate the seeds, place them on the soil, not under. Even when the seeds are on the surface of the medium as in their native habitat, the growth appears as illustrated with roots instinctively going in the direction of the soil. The smooth end is the location from which the root and subsequent leaves will appear. The roughened or patterned end indicates the entry-end that received the pollen by which the ovule was impregnated, ultimately creating the seed.

Most cycad seeds are comparatively smooth. All have a hard shell covering. *Dioon meijae* seeds are distinctive in having a rough surface while the seed of *D. spinulosum* (which some hobbyists feel is similar) has a smooth coat, also a difference in structure. The illustrations show a comparison of only a few types as to size and shape. The size of the seed does not indicate the ultimate size a cycad may attain. Over many years (60 to 100) many of these cycads will become quite large, even become trees. A reminder: raising cycads to any size requires

patience and concern for their care. Only those people having this patience should be collecting these slow growing, rare plants.

Cycads planted in the ground are happy cycads providing they are given ample moisture, good drainage and a location experiencing less than severe winters. Where there is the possibility of harsh winters, plants grown in containers are more successful as they may be moved to locations with proper protection. In decorative containers with ample drainage, the cycads may be grown in semi-shaded areas, with ample reflected light. Weak liquid fertilizer three times a year is recommended.

Outdoor plantings in the ground have been very successful in Balboa Park in San Diego and Quail Botanic Gardens in Encinitas, California. Both parks are in positions to give required protection with trees. Cycads enjoy warm, moist air and damp, well drained positions.

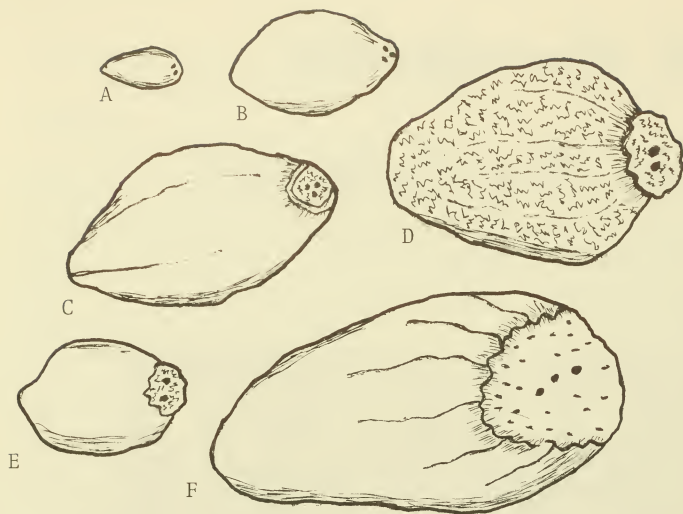
To name a few of the obtainable types (and no one has suggested cycad collecting was inexpensive):

Bowenia serrulata, dark-green, beautiful, the only member of the family with bipinnate fronds. Australia.

Cycas neo-caledonica, medium-green, stiff. New Caledonia.

C. revoluta, stiff fronds, also called sago palm. Southern Japan, Taiwan.

C. circinalis, graceful, fern-like fronds. Malay-



Six types (actual size)
Shown for comparison

- A — *Zamia furfuracea*
B — *Bowenia serrulata*
C — *Cycas spinulosum*
D — *Cycas meijiae*
E — *Macrozamia communis*
F — *mc Donnellii* (*Lepidozamia*)

sia.

Ceratozamia hildae, bamboo-like, distinctive. Mexico.

C. unidentified, upright, full, bushy, medium-green. Honduras/Mexican border.

C. mexicana, distinctive, wide leaflets. Mexico.

Dioon edule, stiff, grey to deep green fronds, popular. Mexico.

D. meijiae, a beauty, blue-green, graceful fronds. Honduras.

D. purpusii, graceful, louvered leaflets. Mexico.

D. spinulosum, dark-green, fern-like fronds. Mexico.

Encephalartos altensteinii, stiff (when young). Africa.

Macrozamia denisonii (*Lepidozamia*), dark-green, graceful. Australia.

M. communis, dark-green, linear leaflets. Australia.

M. moorei, full, fern-like, dark-green. Australia.

M. spiralis, full, stiff, excellent, dark-green. Australia.

Zamia fischeri, excellent potted subject, slender trunk. Mexico.

Z. floridana, another good pot subject, often grown in clumps of three or more. Florida.

Z. furfuracea, to medium size, good container plant, wide, oblong, olive-green leaflets. Florida.

We recommend *Exotica 3* and also *Tropica* for viewing additional varieties of cycads with pictures showing many of the Cycadaceae with cones. All gardeners are grateful to Mr. A. B. Graf who has produced these two great pictorial volumes, bringing the plants of the world into our homes to be appreciated.

When a person begins to collect cycads, he is usually unaware of becoming involved in such a fascinating type of long-lived plants. Even though space in which to grow them might be limited, cycads are an excellent hobby, because they grow so slowly. Seedlings may be enjoyed for years in a very small area. Do not be too concerned about the ultimate size. The chance of these plants outgrowing their welcome is minimal. If they are raised with proper care only your children or grandchildren may have cause for concern. □

Dorothy Behrends is an experienced grower with a wide interest in all horticulture. Many readers have enjoyed her exhibits at the Southern California Exposition and Los Angeles County Fair. She is a former editor of *The Begonian*.



Season's Greetings

California
GARDEN

Soil Amendments

What Can They Really Do?

by Roy L. Branson



WILL A SOIL amendment improve your soil? Perhaps, but just as with other materials applied to soils, the use of amendments should be based on evidence of actual need of the material by the soil. Avoid putting amendments that you know little about on your soil in the hope that they may do some good. Instead, find out if your soil really needs an amendment, and if it does select the correct one to do the job.

To help you find out if an amendment will improve your soil, let's consider what amendments are and what they do. By definition, a soil amendment is a material which improves a soil, not by adding plant nutrients as a fertilizer does, but by

changing the physical or chemical properties of that soil. What do we mean by changing the physical or chemical properties of a soil? The two are discussed separately below.

CHANGING THE PHYSICAL PROPERTIES

Ordinarily, the main purpose in changing the physical properties of a soil is to enlarge the pore spaces to make the soil more permeable to water and air, and to make the soil easier to work. Soils that are most likely to be improved in this manner are fine textured soils with poor structure (little aggregation), or compacted soils.

Enlarging the pore spaces of a soil may be

accomplished in either of two entirely different ways:

- By binding the fine particles of the soil into aggregates.

When organic matter decomposes, gums are produced, and these bind fine soil particles into aggregates. Even these gums, however, are decomposable in time by soil microorganisms; therefore, if aggregates thus formed are to persist, organic matter additions must be repeated.

- By separating the soil particles further, thereby increasing the soil volume.

Materials that are resistant to decomposition must be used if this method of enlarging the soil pore space is to have a long-term effect. In addition, large amounts of such materials must be incorporated. Some amendments of this type include redwood sawdust, peat moss, sewage sludge and rice hulls.

CHANGING THE CHEMICAL PROPERTIES

Exaggerated claims made for some products marketed as soil amendments have beclouded the issue of what soil amendments can really do to improve a soil by changing its chemical properties. An important point to remember is that chemical amendments are useful for correction of specific problems. Amendments are not panaceas or cure-alls for all soil conditions that are not what you would like them to be. If, however, your soil has one of the following two adverse chemical conditions, an appropriate chemical amendment may be highly beneficial:

- Very acid soil conditions.

When the pH of a soil drops to five or below, this is indicative of an extremely acid soil condition. In such cases, addition of a liming material to raise the pH of the soil into the five to seven range is likely to be beneficial and should be considered. Some amendments used for this purpose include ground limestone, quicklime, hydrated lime, marl, oyster shells, sugar-mill and paper-mill waste lime.

A few acid-loving species such as azaleas and gardenias require an acid condition and grow best if the pH is maintained in the range of 5 to 5.5.

- Excess sodium in the soil.

Excess sodium is a problem in some areas of California. Generally, such soils occur where there has been a high water table (within a few feet of the soil surface), and the sodium content of the ground water has been high in proportion to calcium and magnesium. The main symptom of an excess sodium condition in the soil is extreme impermeability.

After an irrigation or a rain, water may stand on the soil surface for weeks or more.

If you suspect an excess sodium condition, this should be confirmed by a soil analysis to determine its exchangeable sodium percentage (ESP). An analysis is recommended because not all soils that are impermeable have an excess of sodium. An analysis will pinpoint those that do. If the ESP is 15 or above, this is indicative of an excess sodium condition. The problem can be corrected by applying a suitable amendment to replace the excess sodium, and then leaching to wash the replaced sodium out of the soil. Adequate drainage is essential if the latter is to be accomplished.

Some suitable amendments for replacing excess sodium include gypsum, sulfur, sulfuric acid, iron sulfate, calcium chloride, and calcium nitrate. Your local farm advisor can advise you on the use of these amendments.

If you do not have one of the above adverse soil chemical conditions, no chemical amendment is likely to improve your soil. □

Roy L. Branson—Extension Soils and Water Specialist, University of California, Riverside, California

In part from *Western Landscaping News* (Feb. 1979)

Mission Hills Nursery

A COMPLETE NURSERY

295-2808

+ Plants
+ Fertilizers
+ Insecticides
+ Garden tools

Visit our exotic greenhouse!

Frank Antonicelli
Owner

1525 Ft. Stockton Dr.
San Diego, CA 92103



A subscription to
California
GARDEN
makes a nice Christmas gift!

BOOK REVIEW

THE NEW YORK BOTANICAL GARDEN ILLUSTRATED ENCYCLOPEDIA OF HORTICULTURE by Thomas H. Everett. Garland Publishing Company, New York and London, 1980, Volume 1, A to Be, 355 pages, \$525.00 (the set)

This exhaustive work in ten volumes will without doubt be one of the most important references in the library of the *San Diego Floral Association*. It has almost everything in its favor: Mr. Everett, senior horticulture specialist of the New York Botanical Garden, as author; a style equally suitable for the layman and the professional; detailed treatment of more than 20,000 species and varieties; and appearance at a time when such a comprehensive work is badly needed.

In his preface Mr. Everett endears himself to the reader by his reassurance that the pretentious word horticulture simply means gardening, and that he has not forgotten that his readers are amateurs, lovers of gardening, or as he puts it, "those who garden for pleasure rather than financial gain or professional status."

"Emphasis is placed," the author writes, "on the appropriate employment of plants both outdoors and indoors, and particular attention is given to explaining in considerable detail the how when-to-do-it aspects of plant growing." Nearly 900 articles deal with this type of subject matter.

Volume 1 is amply illustrated with text photographs of the species described, as well as a number of pages of color photographs placed by good judgment close to the descriptive text. The volume is large and heavy, not for bedtime reading, and strongly bound in green buckram. The second and third volumes are promised for late 1980 and the remaining seven at intervals during 1981.

Mr. Everett came to the New York Botanic Garden in 1932 from London's famed Royal Botanic Gardens and has a long list of books and articles on horticulture to his credit. He writes clearly and simply. The Society is fortunate to have the beginnings of this work. □

Reviewed by RUSSELL MacFALL

Presently only available at:
GARLAND PUBLISHING CO.
136 Madison Ave., NYC 10016

USING WILD AND WAYSIDE PLANTS by Nelson Coon. Dover Publications Inc., New York, 1980, 284 pages, \$4.00

Plants as food, plants as medicine, plants as dyestuff and the raw material of crafts, with a chapter on plants as poisons! Such is the substance of this oddly entertaining potpourri of information about wayside resources for the curious and the daring. Would you like cat-tail-pollen pancakes, or sumac gargle, or basswood flower tea? Coon has all these and much more. The major part of the book is given over to useful trees and shrubs, illustrated with identifying drawings. This is a 1969 revision of a book that first appeared in 1957. □

Reviewed by RUSSELL MacFALL

GROWING CALIFORNIA NATIVE PLANTS by Marjorie G. Schmidt. University of California Press, Berkeley, 1980, 366 pages, \$15.95

Like much else that is desirable in California the state's native plants—some 5000 species—are threatened by urban sprawl and lack of interest in preserving this heritage. This book describes California's own annuals, perennials, bulbs, shrubs and trees and details specific methods of cultivating them in gardens and protecting them in parks, roadside plantings and the like. Mrs. Schmidt writes a column for *Fremontia*, journal of the California Native Plant Society, and has been growing natives for more than 30 years. Illustrations are from drawings by Beth D. Merrick. A list of references, societies and dealers is a commendable feature of the book, one of the California Natural History Guides series. □

Reviewed by RUSSELL MacFALL

LICENSED

DEPENDABLE

"Experienced Nurseryman"

James W. Watson

GARDEN PLANNING AND DESIGNS
RESIDENTIAL LANDSCAPE CONSULTANT
INDOOR PLANT SERVICE & SUPPLIES
COMPLETE LANDSCAPE
INSTALLATION & MAINTENANCE

714 295-0963 (Eve.)

FULLY INSURED

by Rosalie Garcia

THE CHRISTMAS TREE

HOW DID THE little forests of cut fir trees that spring up on vacant lots in early December every year get mixed up with the celebration of the birth of the founder of the Christian religion? Researchers say it goes back to ancient pagan rites deep in the forests of Germany. Early people there celebrated the winter solstice, which marked the beginning of longer days and the coming of more light and warmth, in December. The church had set the date of the birth of Christ in December (or early January, according to which calendar one used). The two celebrations merged, combining the elaborate processions, masses and solemn services of the church with the revelry, feasting and good times of the winter solstice. The church embraced the idea of giving gifts to the poor, and this appears to be the forerunner of Christmas gift giving.

When Martin Luther in Germany broke away from the Church of Rome in the 16th century, it is speculated that he wanted to substitute some rite the Germans would understand and he became the first person known to have brought a cut tree into the house as part of the Christian celebration. The idea caught on and was widely used at holiday time in Germany. When a German prince married an English princess in the 18th century, he brought the German Christmas tree to England. Royalty as a pace setter planted the custom in England; early colonists brought it to America, but not to the Puritans, who kept their celebration solemn and religious.

Along with the Christmas tree we hear frequent mention of Saint Nicholas and Santa Claus, and even confuse them or think of them as the same person. Saint Nicholas was a 4th century priest of the early Christian church in the Middle East. He was very serious and dedicated, and was known to leave gifts for the poor on the eve of the celebration of the birth of Christ, which in those days was done quietly and often in secret.

Santa Claus, believe it or not, is a figment of the imagination of a famous American cartoonist, Thomas Nast, in the 19th century. The jolly fat man in white beard and red suit has become the "patron saint" of American children, and embodies the spirit of Christmas presents in stores, even to cramming his fat self down chimneys!

If Santa belongs only to age three and under, the Christmas tree belongs to all, and is symbolic to all ages and degrees of sophistication. Who is it that does not react to a live tree, especially a conifer, green and vibrant in midwinter, glowing with lights and sparkling with glittering baubles? □



Kudzu

by Sharon Siegan

The Great Cover-Up

THERE IS NO kudzu vine in San Diego today, for which we probably should be grateful. Perhaps it is due to our inclement weather; kudzu thrives where summers are warm and moist. Certainly there was no warning about a future take-over with disastrous results. This is precisely what happened in Atlanta, Georgia, where, according to a *Wall Street Journal* article on July 24, 1979, "[Kudzu's] twisting tendrils have overrun farmhouses, buried abandoned cars, smothered 100 foot tall trees, and in general, engulfed everything in their path."

The giant vine was introduced into this country in 1876 as a centennial gift from Japan, and its initial spread was slow. Bronte Reynolds recalled that "for beauty as a porch vine and rapidity of growth, it surpassed all expectations." He had grown it back in Virginia from slips received in 1907, and been so impressed with its vigor, performance, and beauty that now, in February of 1920, he unhesitatingly recommended it to readers of *California Garden*. His vine had taken five years to begin flowering with heavy clusters resembling those of wisteria in shape and color, and exuding a "heavy, cloying perfume." But to Reynolds, kudzu wasn't just another beautiful ornamental, clothing the landscape in emerald green. Kudzu was a service plant. It had been used as forage in Japan, and it was this potential that he hoped to exploit here.

Reynolds quoted the U.S. Department of Agriculture, which enthusiastically endorsed it "as a forage which merits extensive use on the heavy clay hillsides and otherwise neglected land of the Southern states." Apparently the South found the suggestion worthy. In limited areas, it was grown for cattle fodder, but during the thirties and forties, kudzu took on the status of a rehabilitation project and was planted extensively as a ground cover. So successful was this venture that the vine was hailed as a miracle worker in preventing erosion and restoring land depleted by decades of cotton and tobacco crops.

Two attributes accounted for this heroic feat. First, kudzu's remarkable root network (known to travel as much as seven feet straight down) webbed the earth, preventing erosion. Second, as a member of the legume family, kudzu's heavy nitrogen production restored that needed nutrient to the earth. But like the brooms activated by the sorcerer's apprentice, the vine, once aroused, could not be contained. Reynolds noted: "I can testify to the fact that during the warm, moist nights on the Atlantic Coast it produced an additional growth each night of over a linear foot." This spectacular accomplishment, coupled with the copious "bleeding" of cut stems, and the vine's inherent water locating sensor, were no more than fascinating curiosities to Reynolds. But they held the key to the plant's current infamous reputation. Reynolds had observed that "several shoots, escaping at the base of the vine, made their way for forty feet under porch and house straight for the well. As it was in complete darkness, the vines, when pulled from under the house, were bleached and without leafage, about the size of an ordinary clothesline and very strong and fibrous."

Small wonder then, that latter day farmers, utility repairmen, and those involved in sidewalk and road maintenance, as well as just plain home-owners, despaired in their losing battle to control the hydra-headed kudzu. But couldn't any army of grazers sufficiently decimate the weed? Certainly, if it were accessible to their foraging. It would not help homeowners or others with hilly coverage, unless an enterprising goat were confined to such pasture. But considering the current drought and the expected rise in fodder prices, there might be great interest in salvaging the dried kudzu as hay. This product already has the reputation of appealing to sick horses who otherwise refuse to eat. Of course that presupposes maintaining the weed as a harvest crop.

Then there is the matter of the vine's sinewy strength. Again the economics might just make kudzu twine a cheap substitute for jute.



FIGURE 116.—*Pueraria lobata* (Willd.) Ohwi. Kudzu. A, Habit— $\times 0.5$; B, root— $\times 0.25$; C, flower— $\times 2$; D, legumes— $\times 0.5$; E, seeds— $\times 2.5$.

Or consider the edibility factor. The kudzu root, like so many storage tubers, is rich in starch. Orientals use it to make cakes and noodles. Whether kudzu flour would achieve popularity would depend on price and many other factors, but certainly Americans are receptive to unusual specialty foods.

Finally, kudzu can be burned as a fuel—although perhaps not meeting Ralph Nader's exacting standards for pollution.

All of the above are commercial possibilities, to be explored where the plant is already entrenched,

with eradication a hoped-for result. But would one dare risk repeating Reynolds' advice of half a century ago to San Diego home owners and gardeners? Perhaps. It could be an attractive curiosity. Our weather would prevent rampant growth, except perhaps during an unseasonably warm and wet winter. On the other hand, kudzu is deciduous, and would seemingly offer few advantages not already available in our tested and true wisteria. And since, unlike Japan, we are not an island—and some seeds might find the environment to their liking—why tempt fate? □



NOW IS THE TIME

BEGONIAS MARGARET LEE

Now is the time—

- to keep your planting material moist but **NOT** wet; November and December can be dry months.
- to protect your potted plants if rains arrive; a heavy down-drip can wash out soil and expose the roots.
- to control any insect problem—spray for mealybugs and other pests.
- to also spray for mildew control—read labels and be guided by the instructions on the control material.
- to feed lightly.
- to clean your plants of all dead leaves and wood. Place a top dressing of your favorite mulch around them.
- to allow tuberous begonias to go dormant.

BONSAI DR. HERBERT MARKOWITZ

Now is the time—

- to protect deciduous trees that are dormant; locate them where there are no sudden temperature changes, no excessive sun or wind.
- to cut down on water.
- to withhold fertilizers.
- to remove old leaves, fruit, or seeds from deciduous trees.
- to not transplant trees at this time.
- to prune candles about half length from black pines.
- to protect trees from heavy rains if they arrive.

CACTI & SUCCULENTS VERNA PASEK

Now is the time—

- to make plans to protect tender cacti and succulents in case of heavy rains or cooler weather.
- to check for insects, snails, scale, etc.—cooler weather does not discourage scale or mealybug.
- to repot any pot-bound plants.
- to give a low nitrogen feeding.
- to watch watering—keep moisture level up if dry hot winds occur. Too much water will cause root damage on some plants while others may drop roots if kept too dry, but they will grow new roots.
- to make succulent cuttings.

CALIFORNIA NATIVES HELEN CHAMLEE

Now is the time—

- to plant natives of all kinds—trees, shrubs, perennials, annuals, bulbs.
- to sow wildflower seed in lightly cultivated spots, and sprinkle.
- to keep recently set out plants moist, and hope for rain.
- to transplant divisions and volunteer seedlings.

CAMELLIAS SAN DIEGO CAMELLIA SOCIETY

Now is the time—

- to keep all old blooms picked up to prevent petal blight.
- to maintain humidity—do not allow to dry out.
- to feed a 2-10-10 fertilizer for better and larger bloom.
- to continue disbudding.
- to start treating some buds with gibberellic acid for earlier, larger blooms.
- to maintain a regular spray program—especially against looper worms.
- to select any new plants while in bloom.
- to start early grafts in December.

DAHLIAS ABE JANZEN

Now is the time—

- to allow plants to go dormant by withholding water and fertilizer.
- to cut old stalks that have died and are brown to about twelve inches from ground.
- to allow tubers to harden off by leaving in the ground unless rains are heavy and ground has poor drainage, then lift clumps.
- to allow clumps to dry for a few hours before placing in storage.
- to store in vermiculite or other medium in a protected place.
- to leave one "eye" in each division if dividing tubers before storage. Be sure to apply soil sulphur to any cuts.
- to tag each tuber for identification as you tuck away.

EPIPHYLLUMS SAN DIEGO EPIPHYLLUM SOCIETY

Now is the time—

- to allow your plants to rest, but do not allow soil to remain dry for any prolonged time.
- to stake growing plants so they will not break with wind or rains.
- to check for snails and slugs.
- to use cygon solution to rid pots of pesky mealybugs.
- to give last feeding of year by first part of December—a non-nitrogen fertilizer such as a 0-30-30 or 0-10-10 formula.

FERNS RAY SODOMKA

Now is the time—

- to water plants if it does not rain—check any hidden plants if rain has not reached them.
- to be alert for insects—slugs and snails are ever active.
- to check planting mix in containers to ensure it has not completely broken down.
- to fertilize with a more diluted mixture once more before rest period—before the first of December.
- to clean out oxalis and other weeds from pots.
- to plant spore: keep in a warm area.
- to protect plants at night in frost areas. Cover with newspaper or old sheets, or place under cover in garage or porch.

FUCHSIAS WILLIAM SELBY

Now is the time—

- to clean up plants—remove dead leaves and other debris from pots, baskets, and around ground plants.
- to STOP fertilizing—allow plants to rest.
- to water only to keep from drying out.
- to prune if in a frost-free area. Cuttings may be taken from good tip growth.
- to watch for insects in warmer areas.
- to protect from heavy rains if they arrive.

GERANIUMS CAROL ROLLER

Now is the time—

- to water less often. Each watering should be a thorough one in which the excess water runs out the drainage holes.
- to continue feeding a balanced fertilizer dissolved in water—using at half recommended strength twice as often or as needed to prevent the development of deficiencies.
- to prune any plants which have not been cut back. Leave some green leaves on every stem being cut back. Prune again in 4 to 6 weeks to bring lanky plants into shape.
- to tip pinch plants which were pruned early in the fall.
- to continue pest and disease control; using products according to the manufacturers' directions.
- to give temporary shelter from freezing if temperatures go below 28° F.
- to rotate plants regularly for symmetrical growth.

HEMEROCALLIS (Daylilies) SANFORD ROBERTS

Now is the time—

- to continue preparing planting areas for next spring's plants. Spade deeply.
- to water sparingly during any dry-hot weather to promote late-blooming scapes into bloom during cooler months of fall and winter.
- to do a thorough fall clean-up—removing all dead foliage, weeds, and dead bloomstalks. This discourages wintering over aphids, earwigs, and other chewing insects.
- to plan the garden plantings for February.

IRIS SAN DIEGO-IMPERIAL COUNTIES IRIS SOCIETY

Now is the time—

- to clean beds of dead leaves and weeds; aphids winter-over in debris filled areas.
- to spray for insects and disease.
- to give acid fertilizer (Camellia food) to Japanese and Louisiana iris.
- to plant the bulbous type of iris—Dutch, English and Spanish types.
- to move Pacific Coast natives in late December. Keep watered well until they are established.
- to have a regular watering program for all varieties.

ORCHIDS CHARLIE FOUQUETTE

Now is the time—

- to clean off greenhouse glass—hose off the top glass, and hose or squeegee the side glass.
- to check your furnaces; clean pilot lights, oil fans, clean out hose on proportioners.
- to feed low nitrogen fertilizer to cymbidiums.
- to feed 18-18-18 to cattleyas and phals showing continued growth through root-tips and leaves.
- to be careful not to wet the inside of developing sheaths on "catts", and be careful not to leave water in crowns of phalaenopsis or doris in the evening—it will invite "crown rot".
- to watch the noble hybrids—terminal growth must mature and the days shortened to prepare for flowering. Nobiles require 40 days dropping to 40° F., but do not freeze and NO nitrogen from August until new growth appears.
- to keep snail bait out.
- to clean up leaves, old phal spikes and cattleys sheaths—all are hiding places for snails.
- to keep paphs damp but NOT wet.
- to repot plants that have finished blooming and have roots on new leads, otherwise wait until early spring.
- to be aware of sudden hot days in early November—the Santa Anas are late this year.
- to spray or mist the variegata oncidiums in the morning to be dry by nightfall.

ROSES BRIAN DONN

Now is the time—

- to allow the bushes to rest if you have been pushing them all year.
- to withhold water will help them become somewhat dormant.
- to give dormant spraying in December even before pruning.
- to dormant spray several times from late December and late January. May even start some pruning in late December.
- to visit garden centers to purchase bare-root plants. Many good plants may be found in packages also. The season may begin in late December.

VEGETABLES GEORGE JAMES

Now is the time—

- to set started plants into the garden of lettuce (both head and leaf kinds), celery, broccoli, cabbage, cauliflower, brussels sprouts, and Swiss chard.
- to prepare soil now, and plan to plant after Christmas dormant roots of asparagus, artichokes, rhubarb, and plants of cane berries, grapes, strawberries, and bare-root fruit trees.

GREEN THUMB MARY KRISMUS

Now is the time—

- to plant bulbs for spring color; tulips and hyacinths after Thanksgiving, but be sure to have them refrigerated 4 to 6 weeks before planting.
- to set out winter-spring type annuals for continual garden beauty.
- to apply dormant oil sprays in December to begin control of pests and disease for next year.
- to feed birds-of-paradise. Cut out dead growth from clump to improve appearance.
- to cut mums to within 6 to 8 inches of the ground after bloom.
- to use holly and pyracantha prunings for Christmas decorations. Can also select and plant out such ornamentals from cans for landscaping.

BOOK REVIEW

FLORA OF BAJA CALIFORNIA by Ira J. Wiggins. Stanford University Press, April 1980, 1025 pages, 970 drawings, maps, glossary, bibliography, \$65.00

When the young scientist set out on his first botanical study and collecting trip to Baja California in 1929 his objective was "... to prepare a flora that would cover the known vascular plants of the entire peninsula." He expected it to be a lifetime's work, and so it was—fifty-one years of sometimes heroic fieldwork and meticulous preparation of text and drawings.

Dr. Ira L. Wiggins, Professor Emeritus of Biological Sciences at Stanford University, is more fortunate than some, he has lived to see his monumental work in print. Nearly 3000 kinds of plants are described, their range, habitat and months of flowering given; 970 of them are illustrated by clear (every hair in place) line drawings, showing the habit of the plant and enlarged details of flowering and fruiting parts. This will be the reference on Baja California for years to come.

Altogether it is a fine example of the book-making art. For a volume so large (7 X10½ inches) and hefty (5¼ lbs.) it is exceptionally easy to handle—it opens flat and stays put—no small matter to the user who as often as not has his specimen in one hand and pencil in the other, or both hands on the typewriter. Printed in large (for a flora) clear type, on heavy stock that is a pleasure to touch. Genus names are in boldface, with space around them (helpful when flipping). □

Reviewed by HELEN CHAMLEE

Walter Andersen Nursery

Nursery Stock and Garden Supplies Since 1928
for Beautiful Gardens

We Specialize in Indoor Plants



Free
GARDEN CLASSES
9 a.m. Thurs. & Sat.

3642 Enterprise
San Diego, CA 92110
224-8271

Artistic Pruning By Jim

226-1963

YEAR 1980 SUBJECT INDEX

- AFRICAN VIOLETS**
Winchell, Colleen
Culture of African Violets, Nov-Dec, p. 170-1
- ANNUALS**
Gray, Josephine
Dianthus, Mar-Apr, p. 40-1
Marigolds, May-Jun, p. 75-6
Macdonald, Stuart H.
Winter Color with Annuals and Perennials, Sep-Oct, p. 148-51
- ARRANGEMENTS**
Kendall, Peg
Serenity, Mar-Apr, p. 47-8
- AZALEAS**
Cope, Skipper
The Versatile Azalea, Mar-Apr, p. 58-60
- BAMBOO**
Haubrich, Richard A.
Bamboo, Jan-Feb, p. 7-9
- BEGONIAS**
Maley, Pat
Newcomers to the Begonia Garden, May-Jun, p. 86
- BOOK REVIEWS**
Coon, Nelson
Using Wild and Wayside Plants, Nov-Dec, p. 182
Elbert, Virginia F. & George A.
The Miracle Houseplants: The Gesneriad Family, Jul-Aug, p. 111
Everett, Thomas H.
The New York Botanical Garden Illustrated Encyclopedia, Nov-Dec, p. 182
Feininger, Andreas
Anatomy of Nature, Sep-Oct, p. 159
Herda, D. J.
Growing Trees Indoors, May-Jun, p. 92
Hess, Lilo
The Amazing Earthworm, Mar-Apr, p. 61
Little, Elbert L., Jr.
Forest Trees of the United States and Canada and How To Identify Them, Sep-Oct, p. 159
Livingston, Philip A. & West, Franklin H., editors
Hybrids and Hybridizers, Rhododendrons and Azaleas for Eastern North America, May-Jun, p. 92
Norten, Rebecca Tyson
Orchids as House Plants, May-Jun, p. 88
O'Gorman, Patricia W.
Patios and Gardens in Mexico, May-Jun, p. 88
Schmidt, Marjorie G.
Growing California Native Plants, Nov-Dec, p. 182
Schmidt-Nelson, Knut
Desert Animals, Sep-Oct, p. 159
White, Katherine S.
Onward and Upward in the Garden, Mar-Apr, p. 61
Wiggins, Ira J.
Flora of Baja California, Nov-Dec, p. 188
- BONSAI**
Markowitz, Dr. Herbert A.
Bonsai, Jul-Aug, p. 103-6
- BOTANICAL**
Watson, Dr. Donald P.
Are Plants Smarter Than People?, Jan-Feb, p. 26
Why Plant Patents?, May-Jun, p. 77
- BULBS**
Chamlee, Helen
Ornithogalum, Nov-Dec, p. 173-4
- CACTI AND EPIPHYLUM**
Myers, John B.
Growing Cacti as a New Hobby, May-Jun, p. 80-3
- CAMELLIAS**
Clark, Alice
Camellias as Landscape Material, Jan-Feb, p. 15-7
- CHRISTMAS**
Garcia, Rosalie
The Christmas Tree, Nov-Dec, p. 183
Merry Christmas, Nov-Dec, p. 168-9
- CONSERVATION**
Macdonald, Stuart H.
Endangered Plants, Mar-Apr, p. 49-51
- CONTAINER GARDENING**
James, George
A Living Bouquet, May-Jun, p. 69-72
Siegan, Sharon
Container Ficus, May-Jun, p. 89-91
Ludwig, Mike
Let's Meet the Genus Nematanthus, Jul-Aug, p. 117-8
- CYCADS**
Behrends, Dorothy S.
Collecting Heirlooms Via Nurseries, Nov-Dec, p. 176-9
- DAHLIAS**
Lohmann, Gerald L.
Dahlias, Jul-Aug, p. 119-21
- EDIBLE FLOWERS**
Gunther, Bill
Huh-My-Kuh, May-Jun, p. 78-9
- FRUITS AND NUTS**
James, George
Flowering Plums, Jan-Feb, p. 13-14
- GARDEN MAINTENANCE & TECHNIQUES**
Farleigh, John
Rose Pruning, Jan-Feb, p. 24-5
James, George
Propagation of Plants, Jul-Aug, p. 107-10
Bichowsky, E. Robert
Some Thoughts on Proper Irrigation, Sep-Oct, p. 152
James, George
Winter Lawn Care, Sep-Oct, p. 137-8
- GARDENS, PRIVATE**
Gunther, Bill
A Garden Tour, Sep-Oct, p. 144-6
- GARDENING, SEASONAL**
Now is the Time—compiled by Bunker, Penny
Jan-Feb, p. 30-1; Mar-Apr, p. 62-3; May-Jun, p. 93-5; Jul-Aug, p. 125-7; Sep-Oct, p. 155-7; Nov-Dec, p. 186-8
- GERANIUMS**
Roller, Carol
The One and Only 'Roulette', Nov-Dec, p. 175
- GESNERIADS**
Ludwig, Mike
Let's Meet the Genus Nematanthus, Jul-Aug, p. 117-8
- GROUND COVER**
Oliveras, Phillip
Our Daisies Are Dying, Mar-Apr, p. 56-7
Chamlee, Helen
The Ground Cover of your Choice, Sep-Oct, p. 133-6
- HERBS**
Chamlee, Helen
The Sages in Your Life, Jan-Feb, p. 10-1
- ILLUSTRATIONS (Original Art)**
Cassia alata. By Crawford, Kathleen. Front Cover May-Jun
Dendrobium Donesiae. By Moon, H. G. Back Cover Mar-Apr
Enchanted Forest. By Hermanson, Judy. Front Cover Sep-Oct
Holly. By Scheer, Ilse. Front Cover Nov-Dec
Homalocladium platycladium. By Mastro, Marj. Front Cover & p. 12, Jan-Feb
Hoya Carnosa. By Maley, Pat. Front Cover Jul-Aug
Rose hawana. By Parsons, Alfred. Front Cover Mar-Apr
- ILLUSTRATIONS (Photographs)**
Angelonia grandiflora close-up. P. 101, Jul-Aug
Beaucaria recurvata. San Diego Zoological Society. P. 53, Mar-Apr
Botanical Building interior. By Mastro, Marj. Back Cover May-Jun
Old English Calendar 1866 (reprint). Back Cover Jan-Feb
- LANDSCAPING**
Clark, Alice
Camellias as Landscape Material, Jan-Feb, p. 15-7
Gray, Josephine
Garden Fragrance, Jul-Aug, p. 101-2
- LAWNS**
James, George
Winter Lawn Care, Sep-Oct, p. 137-8
- NATIVE PLANTS**
Chamlee, Helen
The Sages in Your Life, Jan-Feb, p. 10-1
- PERENNIALS**
Siegan, Sharon
Calla, Mar-Apr, p. 45-6
Adams, Kathryn
Hosta, Jan-Feb, p. 5-6
Gray, Josephine
Dianthus, Mar-Apr, p. 40-1
Garcia, Rosalie
The Born-Again Cannas, Jul-Aug, p. 115-6
Macdonald, Stuart
Winter Color with Annuals and Perennials, Sep-Oct, p. 148-51
- PESTS, INSECTS, DISEASES**
Gunther, Bill
The Thousand Dollar Beetle, Jan-Feb, p. 22-3

- PLANT LORE**
Cope, Skipper
Romance in Your Garden, Jul-Aug, p. 123
- ROSES**
Farleigh, John
Rose Pruning in a Mediterranean Climate, Jan-Feb, p. 24-5
Linck, Dr. Robert G.
On Selecting Roses, Mar-Apr, p. 37-9
- SHADE PLANTS**
Ludwig, Mike
Let's Meet the Genus Nematanthus, Jul-Aug, p. 117-8
- SHRUBS**
Macdonald, Allethe
Homalocladium, Jan-Feb, p. 12
James, George
Ilex, Nov-Dec, p. 165-7
- SOIL**
Branson, Roy L.
Soil Amendments, Nov-Dec, p. 180-1
- SUCCULENTS**
Chamlee, Helen
Beaucarnia Recurvata, Mar-Apr, p. 52
Dunn, Dorothy
The Succulent Euphorbias, Jan-Feb, p. 37-9
Johnson, Sheila
The Strangest Flowers, Sep-Oct, p. 139
- TREES**
Ayres, Dr. Samuel
Tree Cassias, May-Jun, p. 73-4
Siegan, Sharon
Fantastic Ficus, Sep-Oct, p. 140-2
James, George
Ilex, Nov-Dec, p. 165-9
Flowering Plums, Jan-Feb, p. 13-4
Macdonald, Allethe
Thevetia, Sep-Oct, p. 153
- VEGETABLES**
Garcia, Rosalie
The Aristocratic Artichoke, May-Jun, p. 86-7
James, George
Pole Tomatoes, Mar-Apr, p. 43-4
Garcia, Rosalie
Seed Sprouting Today, Jan-Feb, p. 21
Squashes Coming Up, Mar-Apr, p. 54-5
Vegetables in Our Future, Jan-Feb, 19-21
- VINES**
Clark, Alice
Hoya Vines, Jul-Aug, p. 124
Siegan, Sharon
Kudzu, Nov-Dec, p. 184-5
- WILD LIFE**
Victoria, Dr. Janice K.
Bushtits, Jul-Aug, p. 112-4

- DUNN, Dorothy
The Succulent Euphorbias, Jan-Feb, p. 27-9
- FARLEIGH, John
Rose Pruning in a Mediterranean Climate, Jan-Feb, p. 24-5
- GARCIA, Rosalie
The Aristocratic Artichoke, May-Jun, p. 86-7
The Born-Again Cannas, Jul-Aug, p. 115-6
The Christmas Tree, Nov-Dec, p. 183
Merry Christmas, Nov-Dec, p. 168-9
Squashes Coming Up, Mar-Apr, 54-5
Vegetables in Our Future, Jan-Feb, p. 19-21
- GRAY, Josephine
Dianthus, Mar-Apr, p. 40-1
Garden Fragrance, Jul-Aug, p. 101-2
Marigolds, May-Jun, p. 75-6
- GUNTHER, Bill
The Thousand Dollar Beetle, Jan-Feb, p. 22-3
A Garden Tour, Sep-Oct, p. 144-6
Huh-My-Kuh, May-Jun, p. 78-9
- HAUBRICH, Richard A.
Bamboo, Jan-Feb, p. 7-9
- JAMES, George
Ilex, Nov-Dec, p. 165-7
A Living Bouquet, May-Jun, p. 69-72
Pole Tomatoes, Mar-Apr, p. 43-4
Propagation of Plants, Jul-Aug, p. 107-10
Flowering Plums, Jan-Feb, p. 13-4
Winter Lawn Care, Sep-Oct, p. 137-8
- JOHNSON, Sheila
The Strangest Flowers, Sep-Oct, p. 139
- JONES, Barbara
The Book Shelf, Jul-Aug, p. 111
- LINCK, Dr. Robert G.
On Selecting Roses, Mar-Apr, p. 37-9
- LOHMANN, Gerald L.
Dahlias, Jul-Aug, p. 119-21
- LUDWIG, Mike
Let's Meet the Genus Nematanthus, Jul-Aug, p. 117-8
- MACDONALD, Allethe
Homalocladium, Jan-Feb, p. 12
Thevetia, Sep-Oct, p. 153
- MACDONALD, Stuart H.
Endangered Plants, Mar-Apr, p. 49-51
Winter Color with Annuals and Perennials, Sep-Oct, p. 148-51
- MacFALL, Russell P.
Book Reviews, Mar-Apr, p. 61; May-Jun, p. 88 & 92; Sep-Oct, p. 159; Nov-Dec, p. 182
- MALEY, Pat
Newcomers to the Begonia Garden, May-Jun, p. 85
- MARKOWITZ, Dr. Herbert A.
Bonsai, Jul-Aug, p. 103-6
- MYERS, John B.
Growing Cacti as a New Hobby, May-Jun, p. 80-3
- OLIVERAS, Phillip
Our Daisies Are Dying, Mar-Apr, p. 56-7
- ROLLER, Carol
The One and Only 'Roulette', Nov-Dec, p. 175
- SIEGAN, Sharon
Calla, Mar-Apr, p. 45-6
Container Ficus, May-Jun, p. 89-91
Fantastic Ficus, Sep-Oct, p. 140-2
Kudzu, Nov-Dec, p. 184-5
- VICTORIA, Dr. Janice K.
Bushtits, Jul-Aug, p. 112-4
- WATSON, Dr. Donald P.
Are Plants Smarter Than People?, Jan-Feb, p. 26
Why Plant Patents?, May-Jun, p. 77
- WINCHELL, Colleen
Culture of African Violets, Nov-Dec, p. 170-1

YEAR 1980 AUTHOR INDEX

- ADAMS, Kathryn
Hosta, Jan-Feb, p. 5-6
- AYRES, Dr. Samuel, Jr.
Tree Cassias, May-Jun, p. 73-4
- BEHREND, Dorothy S.
Collecting Heirlooms Via Nurseries, Nov-Dec, p. 176-9
- BICHOWSKY, E. Robert
Some Thoughts on Proper Irrigation, Sep-Oct, p. 152
- BRANSON, Roy L.
Soil Amendments, Nov-Dec, p. 180-1
- BUNKER, Penny
Now is the Time, Jan-Feb, p. 30-1; Mar-Apr, p. 62-3; May-Jun, p. 93-5
Jul-Aug, 125-7; Sep-Oct, 155-7; Nov-Dec, 186-8
- CHAMLEE, Helen
Beaucarnia Recurvata, Mar-Apr, p. 52
Book Review, Nov-Dec, p. 188
The Ground Cover of Your Choice, Sep-Oct, 133-6
Ornithogalum, Nov-Dec, p. 173-4
The Sages in Your Life, Jan-Feb, p. 10-1
- CLARK, Alice
Camellias as Landscape Material, Jan-Feb, p. 15-7
Hoya Vines, Jul-Aug, p. 124
- COPE, Skipper
Romance in Your Garden, Jul-Aug, p. 123
The Versatile Azalea, Mar-Apr, p. 58-60



- GREENHOUSES
- HYDROPONICS
- WINDOW GARDENS

HOME AND COMMERCIAL APPLICATION
Available for Programs

C. STEPHEN PARKER
(714) 297-5930

ORIGIN OF THE TERM

"GREEN THUMB"

ALTHOUGH THE TERM seems to be in general use, information is scanty as to its origin. Maurice Mulla, of Columbus, Ohio, has come up with the most lucid explanation to date. He says, "Currently the term, 'green fingers' is in wider usage in England and one tart English expatriate described 'green thumb' as an American vulgarization. However, Chaucer, in his *Canterbury Tales*, attributes a 'thombe of gold' to the color of their thumbs. Probably the soundest hypothesis for the term's origin is given by the manager of a Boston Horticultural House, who says that his Scottish gardener father used to tell him that a green thumb stained from the algae on the green house flower pots was the trademark of a gardener. This is consistent with the oldest and by far the most charming of all legends about the origin of 'green thumb.' "

The story goes: In the olden days there once lived in Italy a monk named Fra Antonio. One of his important duties was the care of the cloister garden. So successful was he in the growing of herbs, fruit trees, flowers, and other plants that he became the wonder, and almost envy, of all of his brothers. When asked the secret of his success as a gardener, he always shrugged his shoulders and replied, "I'm sure I do not know, except that I love the plants."

One day he was working in his garden when two of the monks approached from behind his back. When he finally turned and saw them, the senior monk smiled and said, "I know why Fra Antonio can make plants grow so well. See, he has a green thumb."

Fra Antonio looked down at his hands and sure enough, his right thumb was green from the plants that he had been handling. From that day to this, all good gardeners have been said to have a "green thumb." □

MOVING?



Send your change
of address
to...

CALIFORNIA GARDEN
Casa del Prado
Balboa Park
San Diego, CA 92101



Photo by BETTY MACKINTOSH

Potting Bench

THERE IS NOTHING handier or more useful than a potting bench. One of the most convenient features in the design is the space for toes at the base.

Corner posts and supports are made of redwood and the front of the bin is constructed of slats of redwood 1 inch by 4 inches by about 30 inches long. The boards fit into slots down the front making a solid front. The top should be the height most convenient for the gardener who will be using it. Hardware cloth is used for the sides because this allows plenty of air circulation.

The bin is filled with peat, leaf mold, etc. and one pots on top of the material. As the material is used the boards are slipped out of the front and laid on the top to make an ever widening work bench. The front slopes inward from the top so that the material will always drift downwards, too.

The bench can be made in any number of units from one to four bins or more according to one's needs.

Wouldn't this be a nice gift to yourself for Christmas?

B.J. □



RETURN REQUESTED

SECOND CLASS POSTAGE PAID AT SAN DIEGO, CALIFORNIA

RETURN POSTAGE GUARANTEED

CALIFORNIA GARDEN (USPS 084-020)
San Diego Floral Association, Inc.
Casa del Prado, Balboa Park
San Diego, CA 92101

SAN DIEGO FLORAL ASSOCIATION **Annual Flower Show**



Christmas is Everywhere!

December 5-6-7

11:00 a.m. to 4:00 p.m.

Casa del Prado, Balboa Park, San Diego, California